

REMARKS

I. Status of Claims

Claims 6-12 are pending in this application. Claim 6 is the only independent claim and is currently amended. Support for this additional claim language can at least be found in paragraphs [0028] and [0034] of the specification.

Claims 6-12 stand rejected under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the enablement requirement.

Claims 6-12 stand also rejected under 35 U.S.C. 112, second paragraph, as being indefinite for allegedly failing to particularly point out and distinctly claim the subject matter.

Claim 6 stands rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Matsumoto et al. (USP 5,256,107) (hereinafter "Matsumoto").

Claim 6 stands rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Hosdez et al. (USP 5,935,009) (hereinafter "Hosdez").

Claims 6-12 stands rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Kawakatsu et al. (US 2002/0128078) (hereinafter "Kawakatsu").

The Applicant respectfully requests reconsideration of these rejections in view of the foregoing amendments and the following remarks.

II. Drawings

The drawings are objected to because of the following: 1) they allegedly fail to show the PCR and angle recited in claim 6, lines 35 and 37; and 2) because reference numerals 12 and 18 are used to identify features in FIGS. 1-6 and then reused to identify modifications of those features in FIGS. 7-9. In view of the attached Replacement Sheets for FIGS. 3, 5, and 7-9, Applicants respectfully request withdrawal of these objections. Further, the Applicants respectfully submit that θ , representing the required maximum joint angle, is the sum of D , θ , L , and S , all of which are shown.

III. Specification

The disclosure is objected to because paragraph [0061] states that "four or more leg shafts" could be used instead of three, with no explanation of how a joint with "four or more leg shafts" would constitute a constant velocity universal joint. To obviate any perceived ambiguity, this paragraph is amended.

Moreover, paragraph [0060] is amended to correspond with drawing changes discussed herein above.

Thus, the Applicant respectfully requests reconsideration of these objections.

IV. 35 U.S.C. 112, first and second paragraph, Rejections

Claims 6-12 are rejected under 35 U.S.C. 112, first and paragraphs.

In view of the foregoing amendments to claim 6, the Applicant respectfully submits that the 35 U.S.C. 112, second paragraph, rejection is obviated.

Regarding the 35 U.S.C. 112, first paragraph, rejection, the Office Action alleges that there is no indication of whether the coefficients take into account lubrication and/or the wear of the elements between which the coefficients are determined. The present application relates to a thrust force during the rotation of the constant velocity universal joint. Inequality relationships of W1 and W2, shown in claim 1, respectively, need be satisfied in the working condition (e.g., all elements of the constant velocity universal joint are lubricated), and in the condition from new condition of the elements through worn condition of the elements. Accordingly, to obviate any perceived ambiguity, claim 1 is amended to incorporate the following language, “the coefficients are determined based on the conditions from new through worn.” In other words, a coefficient μ_2 indicates a friction coefficient when the inner roller (16) is moved with respect to the outer roller (18) in an axial direction of the inner roller (16), and a coefficient μ_3 indicates a friction coefficient between the convex sphere of each of the leg shafts (30) and the concave sphere of the inner roller (16).

Accordingly, the Applicant respectfully requests reconsideration of this rejection.

V. Pending Claims

Claim 6 stands rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Matsumoto, Hosdez, and Kawakatsu.

The Applicant respectfully submits that claim 6 is patentable over the cited references at least because it recites “the lengths in the axial direction of the cylindrical surface of W1 and W2 are respectively equal to or longer than the length between the uppermost load concentration position (P₁) and the lowermost load concentration position (P₂).”

The cited references Matsumoto, Hosdez, and Kawakatsu, relate to a constant velocity universal joints having structures in which there are cylindrical contact surfaces between an outer roller and an outer joint member. For example, the Office Action indicates that FIG. 12

of Kawakatsu shows curved tapered surfaces at the ends of the outer cylindrical surface of the outer ring 44 (e.g., outer roller) and the ends of the flat engagement surfaces 24a, 24b.

In contrast to the cited references, in the present application, W1 (which indicates a length in an axial direction of the cylindrical surface from a center of the cylindrical surface in the axial direction to an end portion of the cylindrical surface on an outer peripheral side of the outer joint member) and W2 (which indicates a length in an axial direction of the cylindrical surface from the center of the cylindrical surface in the axial direction to an end portion of the cylindrical surface on an joint center side of the outer joint member) are set by the method described in the specification so that the load concentration position at the maximum joint angle is within the cylindrical surface. The cited references do not disclose such an arrangement.

Therefore, the Applicant respectfully submits that, for at least these reasons, claim 6, as well as its dependent claims, is patentable over the cited references.

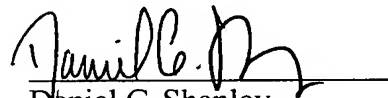
VI. Conclusion

In light of the above discussion, Applicants respectfully submit that the present application is in all aspects in allowable condition, and earnestly solicits favorable reconsideration and early issuance of a Notice of Allowance. The Examiner is invited to contact the undersigned at (202) 220-4420 to discuss any matter concerning this application. The Office is authorized to charge any fees related to this communication to Deposit Account No. 11-0600.

Respectfully submitted,

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APPENDIX

FIGS. 3, 5, and 7-8